U.S. Department of Energy
Office of River Protection
P.O. Box 450
Richland, Washington 99352

01-OSR-0391

Mr. Ron F. Naventi, Project Manager
Bechtel National, Inc.
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Naventi:

CONTRACT NO. DE-AC27-01RV14136 – PHASE A, LIMITED CONSTRUCTION READINESS INSPECTION REPORT, IR-01-004

References:

1. BNI letter from R. F. Naventi to M. K. Barrett, ORP, "Request for Review and Approval of the Limited Construction Authorization Request for the River Protection Project – Waste Treatment Plant," CCN 020503, dated June 5, 2001.

2. BNI letter from R. F. Naventi to M. K. Barrett, ORP, "Transmitted for Information: Limited Construction Authorization Request, Revision 1, Incorporation of Changes per Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-019, Revision 0, *Identify Phase A/B Activities in LCAR*," CCN 023327, dated September 25, 2001.

3. ORP letter from H.L. Boston to R.F. Naventi, BNI, "U.S. Department of Energy (DOE) Notice to Proceed with Limited Construction Activities," 010OSR-0381, dated October 5, 2001.

This letter transmits Inspection Report IR-01-004 in which the Office of Safety Regulation (OSR) assessed Bechtel National, Inc.'s (BNI's) readiness to perform Phase A, Limited Construction activities requested in Reference 1 and amended by Reference 2. The inspection scope included assessment of BNI's capability to perform important-to-safety (ITS) work in accordance with the Integrated Safety Management Plan; BNI having sufficient qualified, experienced, and trained staff to perform the Phase A activities; BNI having adequate procedures to perform the requested work; and BNI's implementation of its Quality Assurance Manual. An OSR verification of readiness of BNI to start Phase A, limited construction work was a prerequisite to the DOE's authorization.

Based on the results of this inspection, the OSR determined BNI is ready to perform Phase A LCAR activities described in Reference 2. No Findings or significant issues were identified. Details of this readiness inspection are documented in the enclosed inspection report.

When BNI provides an assessment of its readiness to proceed with Phase B, Limited Construction activities, the OSR will conduct a similar inspection. The Limited Construction Authorization Agreement (Reference 3) requires a DOE verification of readiness before BNI can start Phase B activities.

If you have any comments concerning the inspection report, you or your staff may contact me or Pat Carier of my staff, (509) 376-3574. Nothing in this letter should be construed as changing the Contract, DE-AC27-01RV14136. If, in my capacity as the Safety Regulation Official, I provide any direction that your company believes exceeds my authority or constitutes a change to the Contract, you will immediately notify the Contracting Officer and request clarification prior to complying with the direction.

Sincerely,

Robert C. Barr
Safety Regulation Official
Office of Safety Regulation

OSR:JLP

Enclosure

Enclosure
01-OSR-0391
IR-01-004

U.S. DEPARTMENT OF ENERGY
Office of River Protection
Office of Safety Regulation

INSPECTION:	PHASE A LIMITED CONSTRUCTION AUTHORIZATION READINESS INSPECTION
REPORT NO:	IR-01-004
FACILITY:	Bechtel National, Inc.
LOCATION:	3000 George Washington Way Richland, Washington 99352
DATES:	August 20 through September 26, 2001
INSPECTORS:	J. McCormick-Barger (Lead), Senior Regulatory Technical Advisor P. Carier, Verification and Confirmation Official K. Chen, Senior Regulatory Technical Advisor J. Polehn (Deputy Lead), Senior Regulatory Technical Advisor D. Kirsch, Consultant F. Wenslawski, Consultant E. Messer-Wright, Consultant
APPROVED BY:	P. Carier, Verification and Confirmation Official Office of Safety Regulation

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EXECUTIVE SUMMARY
Phase A Limited Construction Authorization Readiness Inspection
Inspection Report Number IR-01-004

INTRODUCTION

This inspection of Bechtel National, Inc. (the Contractor) Phase A Limited Construction Program covered the following specific areas:

- Adequacy of Contractor's Assessment of Readiness (Section 1.2)
- Adequacy of the Design (Section 1.3)
- Readiness of the Quality Assurance (QA) and Quality Control (QC) Programs (Section 1.4)
- Readiness of Consumable Material to Support Construction (Section 1.5)
- Adequacy of Records Storage Facilities (Section 1.6)
- Adequacy of Construction Implementing Procedures (Section 1.7)
- Adequacy of Radiological Control Program (RCP) and Implementation (Section 1.8)
- Adequacy of Training and Qualification of Personnel (Section 1.9)
- Adequacy of Construction Occurrence Reporting Plan Implementation (Section 1.10)
- Adequacy of Construction Emergency Response Implementation (Section 1.11)
- Adequacy of the Closure of Inspection Items (Section 1.12).

SIGNIFICANT OBSERVATIONS AND CONCLUSIONS

- The Contractor performed an adequate assessment of readiness to conduct Phase A LCAR activities. The assessment provided the necessary level of confidence that they had examined the readiness to conduct limited construction activities and provided adequate assurance that the requested activities would be conducted in accordance with authorization basis (AB) requirements. (Section 1.2)
- Adequate design process procedures were in place and being implemented to support Phase A LCAR work. Fire water system installation, calculation notes, identification of design basis documents, and preliminary drawings provided a solid basis for the work to proceed safely. Although an analysis to confirm the findings in the Geotechnical report

regarding soil excavation related activities (Phase B or later work) was ongoing, the Contractor's current design process for this area was adequate for Phase A work to proceed safely. (Section 1.3)

- The Contractor's QC oversight program contained the required elements of the Quality Assurance Manual (QAM). The Contractor had trained and certified QC staff and had procedures in place to support early receipt and inspection of important-to-safety (ITS) materials that will be required for future DOE Construction Authorizations. (Section 1.4)

- The Contractor's field materials management provisions were adequate. The materials required for LCAR activities had been defined; however, no ITS materials were required to be purchased to support Phase A LCAR activities. Although no ITS materials had been procured, received, or stored, materials to support limited construction activities were in various stages of procurement and were scheduled to be available when needed. (Section 1.5)

- The Contractor's plan to develop and implement a field document control program and facility was timed commensurate with planned limited construction field activities and met the AB requirements. (Section 1.6)

- The Contractor had established adequate controls governing execution of construction activities. This included establishing adequate subcontract technical specifications providing technical and QA requirements, providing adequate information in Request for Proposal (RFP) documents, and providing an underground fire water system design implementing the requirements of NFPA and DOE standards. The Contractor had provided adequate procedures and drawings to locate the survey working points and building footprints for all buildings, except the Pretreatment and Laboratory buildings. (Section 1.7)

- The Contractor had developed and was prepared to implement a radiological control program commensurate with the potential radiological hazards that might occur during limited construction. Radiation Control Technicians were qualified and provisions were in place to obtain appropriate radiological detection instrumentation that would be calibrated and maintained through a QA qualified site subcontractor. (Section 1.8)

- The Contractor had procedures that adequately defined the training and qualification program applicable to construction workers. The Contractor had a program in place to ensure new construction hires had appropriate qualifications for the positions they would fill. Construction staff training was commensurate with job assignments. (Section 1.9)

- The Contractor captured the commitments made in the Construction Occurrence Reporting Plan for limited construction submitted to ORP on July 26, 2001. Based on this conclusion, future radiological, nuclear, and process safety occurrences of interest to the Office of River Protection (ORP) should be reported and entered into the appropriate reporting systems. (Section 1.10)

- Revision 1 of the Contractor's *Emergency Management Program* and *Emergency Action Plan* were adequate to support limited construction. The Contractor had trained emergency response organization (ERO) staff and implemented emergency response provisions sufficient to support start of construction. (Section 1.11)

- The inspectors reviewed the corrective actions for inspection items IR-00-002-01-IFI and IR-01-001-OTH and determined that the corrective actions were adequate. These items are considered closed. In addition, the inspectors reviewed IR-01-004-OTH and determined the Contractor had completed adequate corrective actions for one of the ten remaining sub-items to be closed. (Section 1.12)

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PHASE A LIMITED CONSTRUCTION AUTHORIZATION READINESS INSPECTION

Table of Contents

Attachments

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PHASE A LIMITED CONSTRUCTION AUTHORIZATION READINESS INSPECTION

1.0 REPORT DETAILS

1.1 Introduction

In accordance with the River Protection Project Waste Treatment Plant (RPP-WTP) Contract (DE-AC27-01RV14136) between DOE and the Contractor (Bechtel National, Inc., [BNI]), dated December 11, 2000, the Contractor submitted a Limited Construction Authorization Request (LCAR) on June 5, 2001, for DOE review and approval. Part of the DOE process for approval of the Contractor to begin LCAR work included inspection of the Contractor's readiness to proceed with limited construction.

The inspectors reviewed the Contractor's limited construction implementing procedures, programs, and activities to determine if they complied with the commitments in the LCAR, Radiation Protection Program (RPP), Integrated Safety Management Plan (ISMP), Quality Assurance Manual (QAM), and Safety Requirements Document (SRD). In addition, the inspectors assessed the implementation of the Contractor's limited construction programs, to the extent possible prior to start of limited construction, to verify processes were in place and being utilized to support future limited construction activities in a controlled manner.

The inspectors began this readiness review the week of August 20, 2001. As the inspectors evaluated the Contractor's readiness to perform the identified limited construction activities, they identified tasks necessary to begin limited construction that had not been completed. Similar uncompleted tasks had been identified and documented in the Contractor's own self-assessment report. Based on this, the Office of Safety Regulation (OSR) suspended the inspection and informed the Contractor that before completing the inspection, the Contractor would need to address the issues identified by the inspectors and the Contractor's self-assessment, and provide a letter indicating its readiness to start LCAR work. To facilitate an early limited construction start date, the Contractor submitted a letter (CNN: 022806) dated September 21, 2001, stating that they were ready to begin the Phase A portion of LCAR construction activities. On September 25, 2001, the Contractor submitted a second letter (CCN: 023327) containing revision 1 to the LCAR that incorporated an Authorization Bases Change Notice (24590-WTP-ABCN-ESH-01-019) defining in the LCAR the Phase A and B work activities.

Following receipt of the letters described above, the inspection was restarted to assess the Contractor's readiness to support start of Phase A LCAR work. Details and conclusion regarding this inspection are described below.

1.2 Adequacy of the Contractor's Assessment of Readiness (Inspection Technical Procedure (ITP) I-127)

1.2.1 Inspection Scope

The inspectors assessed the adequacy of the Contractor's assessment of readiness to perform limited construction activities. The inspectors reviewed the Contractor's self-assessment reports, the project's organization chart, and a level IV construction schedule, and interviewed Contractor management and staff.

1.2.2 Observations and Assessments

The inspectors reviewed the following procedures and documents:

- 24590-WTP-RPT-CN-01-004, *Construction and Acceptance Testing Program,* Revision 0, August 15, 2001
- 24590-WTP-RPT-CN-01-001, *Construction, Procurement and Acceptance Testing,* Revision 0, July 2, 2001
- 24590-WTP-MAR-ESH-01-003, *Management Assessment Report for Radiological Safety Engineering,* Revision 0, August 10, 2001
- 24590-WTP-RPT-G-01-002, *Readiness Self-Evaluation of Limited Construction Authorization Request Activities,* Revision 0, August 15, 2001
- 24590-WTP-ORC-HR-01-001, *WTP Project Organization Charts,* Revision 1, August 10, 2001
- CCN: 022806, *Declaration of Readiness for Limited Construction Authorization Request Activities*, September 21, 2001.

The Contractor performed an initial self-evaluation of readiness to conduct LCAR activities (*Readiness Self-Evaluation of Limited Construction Authorization Request Activities*) as documented in its August 15, 2001, report, listed above. The Contractor concluded that a comprehensive status of project readiness could not be readily determined and provided certain recommendations toward resolution to reach a definitive conclusion on LCAR readiness.

During the first week of the inspection, the inspectors examined the scope, depth, and results of the Contractor's self-evaluation and concluded that the Contractor had performed an adequate self-evaluation and identified those actions not completed and remaining to be accomplished. However, the Contractor's self-evaluation did not make any projections regarding when the actions necessary to assure readiness to conduct LCAR activities would be completed, although the inspectors recognized this determination was outside the scope of the self-evaluation.

The Contractor was in the process of establishing the requirements for each organization to assure readiness to begin LCA work at the site. The process consisted of each organizational manager being responsible for identifying and scheduling a complete list of work activities needed to ensure readiness, assuring and certifying that each activity was completed, and presenting the results of organization work completion and verification activities to a board of managers assembled to advise the Project Manager regarding LCA readiness. Each list was planned to include an identification of procedures, procurement, training, and work activities needed to be done by subcontractors to assure the readiness of the subcontractors to conduct their contracted work activities. The Contractor planned to verify the readiness of subcontractors prior to the subcontractor beginning work. However, these actions were in progress and many activities needed to support start of LCAR work had not been completed.

As discussed in Section 1.0 above, following receipt of the September 21, 2001, letter indicating that the Contractor had completed the work activities necessary to conclude they were ready to begin Phase A LCAR work, the inspectors reviewed the Contractor's follow-up readiness information attached to the letter. These attachments demonstrated an adequate depth and scope of the Contractor's readiness assessment, as described above. The inspectors examined the scope and findings of the Contractor's analysis and found that the Contractor had taken appropriate measures to evaluate and assure readiness to begin the requested limited construction activities.

1.2.3 Conclusions

The inspectors found the Contractor's August 15, 2001, readiness assessment to be an adequate self-evaluation that identified those actions not completed and remaining to be accomplished. However, the initial self-evaluation report did not provide the Contractor's planned actions to further determine and establish the requisite level of confidence regarding readiness to conduct LCAR construction activities. The Contractor's initial self-evaluation did not make any projections regarding when the actions necessary to assure readiness to conduct LCAR activities would be completed. However, the inspectors found the Contractor had been in the process of establishing the requirements for each organization to assure readiness to begin LCA work at the site.

The inspectors concluded that the Contractor's subsequent readiness assessment, dated September 21, 2001, provided detailed information supporting the declaration of readiness to conduct Phase A LCAR activities.

1.3 Adequacy of the Contractor's Design (ITP I-127, I-104)

1.3.1 Inspection Scope

The inspectors assessed the adequacy of the Contractor's design in fire water system installation and soil excavation related activities (excavation, soil compaction test, and refill) as requested by the Contractor's LCAR. The inspectors interviewed project management and engineering line

management. In addition, the inspectors reviewed the project's organization chart, calculation notes for the design, design basis documents, and procedures to implement the design.

1.3.2 Observations and Assessments

The inspectors reviewed the following:

- Procedure K13P023, *Internal Review and Approval of Documents*, Revision 0, January 31, 2001
- Procedure K70P554, *Interface Control*, Revision 2, February 12, 2001
- Procedure K70P557, *Design Inputs*, Revision 2, June 4, 2001
- Procedure K70P565, *Design Criteria Database*, Revision 0, August 7, 2001
- Procedure K70P528, *Authorization Basis Maintenance*, Revision 0, January 31, 2001
- Procedure K70P030, *Design Change Control*, Revision 5, June 21, 2001
- Procedure K70P551, *Drawings, and Sketches: Preparation, Checking, and Approval*, Revision 2, June 4, 2001
- Procedure K70P552, *Preparation, Review, and Approval of Procurement Specifications, Data Sheets, and Bills of Material*, Revision 0, February 10, 2001
- Procedure K13P020, *Project Records Management*, Revision 0, April 13, 2001
- Design Basis Document, *Geotechnical Investigation Report,* by Shannon & Wilson, H-1616-51, May 2000.

The calculation notes for fire water system were completed, reviewed, and approved by the Contractor. The inspectors reviewed the following calculation notes related to fire water installation: 1) Sprinkler System-Fire Pump House, CALC-W375 BF-M00005, September 20, 1999, 2) Fire Water Main Sizing Calculation, CALC-W375 BF-M00004, June 6, 1999, and 3) Fire Pump Capacity Sizing, CALC-W375 BF-M00006, September 20, 1999. The inspectors found the design basis documents for fire water system installation appropriately included several National Fire Protection Association (NFPA) codes, with the primary one being NFPA 24 (*Standard for the Installation of Private Fire Service Mains and Their Appurtenances*). The inspectors reviewed the process and instrumentation diagram (P&ID) for the fire water system (*P&ID for Fire Protection System, Fire Water Main Loop-system number 0930*, Drawing No. 24590-BOF-M6-930-00001, Revision A). The inspectors also reviewed the technical specification (*River Protection Project-Waste Treatment Plant Specification for Underground Fire Protection Piping Mains*, 24590-BOF-DIM-FP-01-001, July 1, 2001) for underground fire protection piping mains. The technical specifications were intended to be part of the RFP for the

fire water system installation work. Based on these reviews, the inspectors found the Contractor's design for fire water system installation to be adequate and acceptable.

The inspectors were informed the primary design basis document used by the Contractor for soil excavation related activities was the *Geotechnical Investigation Report*. The Office of Safety Regulation (OSR) had previously reviewed this report (*Safety Evaluation Report of Contractor's Limited Construction Authorization Request (LCAR)*, 01-OSR-0310, August 15, 2001.) The *Geotechnical Investigation Report* concluded the site soil conditions had adequate capacity to support assumed major process building loads without significant deflections and the site soil was capable of sustaining significantly greater bearing loads than those estimated. The inspectors were informed the Contractor was performing a confirmation analysis using calculated building loads to validate the conclusions in the *Geotechnical Investigation Report*. This analysis and the foundation construction drawings for the excavation were expected to be completed before the associated construction work starts (Phase B LCAR and beyond). A review of these documents will be included, as applicable, in subsequent readiness reviews and construction authorization request reviews. The inspectors also reviewed the subcontractor technical specifications for excavation and backfill (*River Protection Project-Waste Treatment Plant Technical Specification for Excavation and Backfill*, DIM-24590-01-00015, June 6, 2001), and soil testing (*River Protection Project-Waste Treatment Plant for Material Testing Services*, DIM-24590-01-00077, June 15, 2001) to verify that appropriate requirements of Safety Requirements Document (SRD) Safety Criterion (SC) 4.1-2 were specified. Based on this review, the inspectors found these technical specifications acceptable.

The inspectors assessed the adequacy of the Contractor's design process to meet the requirements in the authorization basis (AB). The inspectors reviewed the Contractor's procedures to implement the design process in the following areas: design interface and coordination among internal and external participating organizations, establishment of design criteria and design changes including AB change maintenance, implementation of configuration management for design work, design change control, and drawing and document control. The inspectors found the Contractor's design process was acceptable and met the requirements in the AB.

1.3.3 Conclusions

The Contractor had adequate procedures in place to implement the design process as stated in the Contractor's LCAR for Phase A work. Fire water system calculation notes, design basis documents, and preliminary drawings provided the basis for installation work to proceed safely in this area. The inspectors found that the Contractor's current design process for Phase A LCAR work was adequate.

1.4 Readiness of the Contractor's Quality Assurance and Quality Control Programs (ITP I-127, I-132, I-133)

1.4.1 Inspection Scope

The inspectors assessed the Contractor's procedures and process for controlling the quality control (QC) program as it was related to limited construction. This included:

- Qualification and certification for QC personnel
- Criteria for QC verification activities
- Plans for, or performance of, QC verification activities.

The inspectors also assessed the Contractor's plans for the quality assurance (QA) organization to audit the effectiveness of the QC program.

1.4.2 Observations and Assessments

The inspectors reviewed the following procedures:

- 24590-WTP-GPP-CON-7101, *Construction Quality Control Program*, Revision 0, August 17, 2001
- 24590-WTP-GPP-CON-7106, *Quality Control Personnel Certification*, Revision 0, August 6, 2001
- 24590-WTP-GPP-CON-4101, *Construction Subcontract Management*, Revision 0, August 16, 2001
- 24590-WTP-GPP-CON-7104, *Nonconformance Reporting and Control*, Revision 0, August 14, 2001
- 24590-WTP-GPP-CON-1301, *Construction Training*, Revision 0, August 15, 2001
- 24590-WTP-GPP-CON-4101, *Construction Subcontract Management*, Revision 0, August 16, 2001.
- 24590-WTP-GPP-GCB-00100, *Field Materials Management*, Revision 0, August 17, 2001.

The inspectors reviewed the *Quality Control Personnel Certification* procedure to verify the Contractor had established requirements for qualifying QC personnel as Level II or Level III inspectors depending on the QC inspectors' education and experience in the area of qualification. The procedure addressed certification requirements for the categories of civil, electrical piping/mechanical, special processes, and general. The procedure also provided endorsement categories for each of the certification categories described above and clearly indicated that

certification was required before the QC inspectors could perform related work. The inspectors confirmed the procedure contained each of the items required by the Contractor's QAM. For example, these procedures contained the items required by NQA-1-1989, Supplement 2S-1, Supplementary Requirements for the Qualification of Inspection and Test Personnel. The procedure, however, specifically excluded nondestructive examination (NDE) qualifications. The Contractor informed the inspectors that an NDE QC qualification procedure would be developed at a later date, once welding engineers are hired for the project.

The inspectors interviewed the QC Manager and were informed that four individuals were designated as QC inspectors on the project. The inspectors reviewed the qualification files for the four QC inspectors. The files contained the information required by the Contractor's *Quality Control Personnel Certification* procedure. This information included:

- RPP-WTP Certificate of Qualification form, listing the number of years of inspection experience
- The Annual Physical Exam Record form, indicating an eye examination was performed and containing a statement of physical condition
- Objective evidence of a written QC examination
- Copy of the individual's resume.

The inspectors reviewed the QC training matrix, applicable training profiles, and appropriate records, to verify that QC personnel had completed the required training.

The inspectors reviewed the *Construction Quality Control Program* procedure, to confirme the Contractor had specified an adequate program for ensuring construction activities conform to quality standards. The program dictated both QC and field engineering elements. Field engineering was required to perform day-to-day monitoring and verification of construction activities, regardless of quality classification, to ensure compliance with approved design. To ensure independence between those who perform ITS work and those that inspect the work, QC was required to perform in-process and final inspections of items and activities classified as Quality Level (QL)-1, QL-2, and QL-3.

The inspectors reviewed the *Construction Quality Control Program* and *Nonconformance Reporting and Control* procedures, and verified the Contractor had provisions for ensuring the QC inspectors had the freedom and responsibility to report nonconforming items, services, products, and processes. The procedures also required personnel performing evaluations to determine disposition of these non-conformances to have demonstrated competencies in the specific areas they evaluate. Final inspections of items, materials, assemblies, or systems were required to be performed after discrepancies and omissions had been corrected or otherwise dispositioned.

One specific Phase A LCAR line item included receipt inspection of ITS materials being procured to support future construction activities. From review of the *Field Materials*

Management procedure, the inspectors verified the receipt inspection requirements specified in the Contractor's QAM were addressed.

At the time of the initial inspection, other than the receipt inspection procedure described above, the Contractor had not prepared specific procedures for performing QC inspections. The Contractor informed the inspectors that most LCAR related ITS work would be performed during performance of Phase B LCAR work and would be performed by subcontractors that would have their own procedures and QC oversight and would be surveilled by the Contractor's QC organization in accordance with the *Construction Subcontract Management* procedure. The inspectors reviewed the *Construction Subcontract Management* procedure and found the procedure required the QC Manager to review the subcontracts and determine QC hold points and surveillance activities for the work being performed by the subcontracts. Since no limited construction subcontracts had been awarded at the time of the inspection, the inspectors were not able to verify subcontractor procedures required appropriate subcontractor QC oversight or that the Contractor QC Manager had established appropriate hold points or surveillance program for work being performed by the subcontractors. This area will be reviewed during the Phase B LCAR readiness inspection.

The inspectors verified the Contractor's QA organization had scheduled an audit of QC activities to ensure compliance with the Contractor's construction QC program. This audit was currently scheduled for February 2002.

1.4.3 Conclusions

The Contractor's QC oversight program contained the required elements of the QAM. The Contractor had trained and certified QC staff and had procedures in place to support early receipt and inspection of ITS materials that will be required for future WTP Construction Authorizations. The Contractor's procedures to manage subcontract work included provisions for conducting QC surveillance activities of subcontractor ITS work.

1.5 Readiness of Consumable Material to Support Construction (ITP I-127, I-112, I-130, I-132, I-137)

1.5.1 Inspection Scope

The inspectors assessed the Contractor's procedures and processes for defining, procuring, receiving, and storing materials necessary to support limited construction activities.

1.5.2 Observations and Assessments

The inspectors examined the Contractor's plans and schedules for procuring the material necessary to support the planned construction activities during execution of limited construction. The inspectors found that the Contractor did not plan to procure or install any ITS material during limited construction and consumables needed for limited construction were not ITS. The

inspectors found that consumables had been defined and activities leading to issuing procurement documents had been planned and scheduled and were in various stages of the procurement process. The Contractor's plans and schedules demonstrated that the materials would be available when needed.

The inspectors discussed the purchasing of reinforcing steel with QA and Procurement organization management. The Contractor had not yet issued any procurement contracts for reinforcing steel and stated that all reinforcing steel would be purchased to ITS requirements, except for some number 4 and 5 size bars needed to support non-ITS limited construction activities. The non-ITS reinforcing steel would be purchased with an epoxy coating to distinguish those bars from ITS bars. The QA organization had reviewed bidder QA programs and was planning to perform bidder QA program audits to evaluate QA program implementation. Delivery of ITS reinforcing steel was currently scheduled for January 2002.

Fire protection system construction consumables had been defined and scheduled to be available when needed. Procurement requisitions had not yet been issued. The fire protection system material procurement, receipt inspection, and storage will be examined, as applicable, during the Phase B LCAR readiness inspection.

The inspectors examined procedure 24590-WTP-GPP-GCB-00100, *Field Materials Management*, Revision 0, August 17, 2001, for accomplishing field materials management. The procedure specified adequate controls governing material receipt, storage, issuing, inventory, shipping, security, and segregation. The procedure also provided adequate provisions for the maintenance of material in storage facilities and areas.

1.5.3 Conclusions

The inspectors concluded that the Contractor's field materials management provisions were adequate, the materials required for limited construction activities had been defined, and no ITS materials were required to be purchased to support limited construction activities. The inspectors further concluded that, although no materials had been procured, received, or stored, materials to support LCA construction activities were in various stages of procurement and were scheduled to be available when needed.

1.6 Adequacy of Records Storage Facilities (ITP I-127, I-131)

1.6.1 Inspection Scope

The inspectors assessed the Contractor's plans, programs, and procedures for establishing record storage facilities to support the storage and retention of limited construction activity records in conformance with AB requirements.

1.6.2 Observations and Assessments

The inspectors met with the Supervisor, Document Control, to discuss the Contractor's plans for establishing a document control facility at the site during limited construction activities. The supervisor stated that initially, construction management would utilize the current design phase document control facility to manage construction quality records. The supervisor stated that once the two-story construction management facility is built, Project Document Control would establish a field document control facility with similar hardware and procedural controls that were present in the design phase document control facility. These features were to include storage of records in one-hour fireproof storage files and providing controlled access to the storage area. The supervisor stated that the timing and level of staffing to support the field document control facility would be commensurate with the level of activity at the construction site.

During review of Contractor's construction procedures, as documented in other areas of this inspection report, the inspectors found adequate procedural evidence that quality records were identified and required to be maintained as quality records. Previous reviews of the Contractor's design phase document control program and facilities had determined that the Contractor's current document control program was adequate. The Contractor's plan to establish a field document control program commensurate with planned construction activities was acceptable to support limited construction.

1.6.3 Conclusions

The Contractor's plan to develop and implement a field document control program and facility that is timed commensurate with the planned limited construction field activities was acceptable and met AB requirements.

1.7 Adequacy of Construction Implementing Procedures (ITP I-127, I-112)

1.7.1 Inspection Scope

The inspectors verified the Contractor/subcontractors had approved procedures describing administrative controls and work processes for implementing the fire protection water system and ITS foundation construction activities to be accomplished during limited construction. The inspectors reviewed programs and procedures to accomplish the construction and inspection activities and interviewed personnel responsible for these activities. Specifically, the inspectors examined the Contractor's LCAR, selected a sample of Contractor commitments in the areas of fire protection and ITS building foundation backfill, compaction, and soils testing, and verified the selected commitments were implemented in construction work procedures.

1.7.2 Observations and Assessments

The Contractor was in the process of soliciting bids for supplier subcontracts involving ITS

building foundation soil backfill and compaction, an ITS materials testing laboratory, and the supplier of the concrete constituents and batch plant. The QA organization had not yet performed any evaluations of bidder QA programs; nor had any supplier audits been accomplished in preparation to place successful bidders on the Approved Supplier List (ASL). The Contractor planned to install the firewater ground loop and hydrants using their own staff and to obtain measuring and test equipment (M&TE) calibration services through a sole-source purchase order. The M&TE calibration purchase orders had been written, and QA had performed the QA program evaluations in this regard. QA had evaluated the radiation protection instrument calibration subcontractor but had not evaluated the QA program implementation for the calibration subcontractor(s) for all other M&TE. No construction craft personnel had yet been hired. Because no subcontractors had yet been selected, no subcontractor work or QC procedures had been prepared and submitted to the Contractor for review at the time of the inspection. Accordingly, the inspectors were unable to assess the thoroughness of the procurement process for subcontractors, the adequacy of quality assurance programs for subcontractors performing ITS work, the adequacy of work and inspection procedures for those subcontractors, and the personnel qualifications of subcontractor staff performing ITS work and inspections.

The inspectors reviewed the work processes necessary to support Phase A LCAR work activities. The inspectors discussed the plans for performing civil surveying operations with the Contractor's staff charged with performing the work. The inspectors examined drawing 24590-CM-MRA-CY20-00002, *RPP-WTP Site General Arrangement Plan*, Revision 0, August 29, 2001. The drawing located the survey working points for all major buildings and the configuration of the ITS Low Activity Waste and High Level Waste buildings were final. However, the Pretreatment and Laboratory building survey working points, configuration, and size were not finalized yet, as indicated by a drawing note stating Engineering was still in the process of performing analyses to determine the size and configuration of the buildings. The inspectors examined drawing 24510-LAW-DB-S13T-00003, *LAW Vitrification Building-Main Building Concrete Key Plan at El (-)21' 0,"* Revision 0, August 30, 2001, and drawing 24510-LAW-DB-S13T-00001, *HLW Vitrification Building Concrete General Arrangement Plan at El (-)21' 0,"* Revision 0, August 30, 2001, and verified that these drawings were issued for construction and specified appropriate details to effect construction. The inspectors concluded that adequate information existed to locate the survey working points and building footprints for all buildings, except the Pretreatment and Laboratory buildings.

The inspectors sampled and examined the Contractor's procedures for controlling and accomplishing construction work on the site. Specifically, the inspectors examined the following:

- 24590-WTP-GPP-CON-1201, *Construction Work Packages*, Revision 0, August 17, 2001

- 24590-WTP-GPP-CON-1201, *Construction Training*, Revision 0, August 15, 2001

- 24590-WTP-GPP-CON-3103, *Field Change Requests (FCRs)/Field Change Notices (FCNs)*, Revision 0, August 17, 2001

- 24590-WTP-GPP-CON-3201, *Construction Surveying*, Revision 0, August 16, 2001
- 24590-WTP-GPP-CON-7102, *Control of Measuring and Test Equipment*, Revision 0, August 14, 2001
- 24590-WTP-GPP-CON-7106, *Quality Control Personnel Certification*, Revision 0, August 2, 2001
- 24590-WTP-GPP-CON-7104, *Nonconformance Reporting and Control*, Revision 0, August 13, 2001.

The inspectors concluded that the above procedures specified adequate controls governing the construction activities addressed by the procedures.

The inspectors compared the *Control of Measuring and Test Equipment* procedure requirements with those specified by the QAM. The inspectors found the procedure satisfactorily implemented the QAM requirements in the area of M&TE control. The inspectors determined that no M&TE had been entered into the M&TE system, although a Nikon civil survey Total Station instrument had been received by the mailroom and was in the process of being quarantined until the Contractor could complete the requirements specified in the *Field Materials Management* procedure. The inspectors examined purchase requisition 24590-CM-MRA-CY20-00002, for the Nikon Total Survey Station-Model DTM-851, dated August 29, 2001, and concluded that the purchase requisition included adequate quality provisions for certifying calibration. The inspectors found that other civil surveying consumables and M&TE had been ordered but had not yet been received.

The inspectors examined the Contractor's plans and procedures for controlling the Nikon Total Station civil survey instrument as measuring and test equipment. The Contractor ordered the Nikon Total Station instrument to be calibrated by the equipment supplier and supplied with calibration certifications. The Contractor's survey staff stated the equipment would be sent to the original equipment manufacturer if it ever needed re-calibration. The inspectors questioned whether the original equipment supplier was approved as a calibration laboratory by the QA Manager, as required. The inspectors determined the Contractor had not approved the original equipment supplier as an approved off-site calibration service as required by the QAM. The procedure for *Construction Surveying*, paragraph 3.3.3.2, required that total stations and precision levels be calibrated by an off site calibration laboratory, in accordance with the M&TE program and as specified by the *Control of Measuring and Test Equipment* procedure. Paragraph 3.3.7 of this procedure, required off-site calibration services be provided by suppliers approved by the project QA Manager. The inspectors pointed out there were no apparent mechanisms for re-calibrating the instrument and questioned the acceptability of the as-supplied calibration. The inspectors understood the instrument was in a quarantined state in the mail room and had not been receipt inspected and accepted for use by the Contractor.

The Contractor performed several actions to resolve this issue. Quality Engineering reviewed all procurement requisitions to identify those with provisions for M&TE to be calibrated by the supplier. The results of the review were documented in a letter, dated September 27, 2001, from Quality Engineering to the QA Manager. The review concluded there were several requisitions

in process that would procure items requiring calibration after receipt by a QA qualified laboratory. Two requisitions were identified for pressure gauges that did require calibration certification from the supplier and those orders were scheduled to have hold tags applied at receipt and the gauges calibrated by a QA qualified laboratory.

Regarding the Nikon Total Station instrument, the inspectors reviewed the calibration documentation supplied by the manufacturer and the calibration service in California. Nikon Corporation, in Japan, calibrated the instrument (as indicated on the calibration data sheet dated September 10, 2001) prior to shipment. The instrument was again calibrated upon arrival in the United States by a laboratory in California, on September 19, 2001; that data sheet indicated it was out of tolerance and was subsequently returned to within tolerance requirements. The QA Manager dispatched a representative to the California laboratory and learned the laboratory did not have the required QA program to qualify them as a calibration vendor, although the QA representative provided assurance the laboratory had performed an adequate calibration using calibration sources traceable to national standards. The Contractor concluded the calibration could not be accepted and was taking action to return the instrument to the laboratory in California for calibration, to be witnessed by a Contractor QA representative and a licensed surveyor in charge of performing the site civil survey activities. The inspectors considered these actions adequate to resolve the issue of Total Station instrument calibration and should assure the instrument would be properly calibrated when used by the civil survey crews. The inspectors considered the Contractors actions adequate to resolve this issue.

The inspectors examined SP-24590-BF-C00011, *Technical Specification for Material Testing Services,* Revision A, June 15, 2001, and the RFP 24590-QL-SRA-SY01-00002, *Civil Material Testing Services Purchase Requisition and Request for Proposal,* Revision A, July 18, 2001. The inspectors compared the listing of required industry codes and standards with a sample of those referenced by American Concrete Institute standards provided in the Safety Requirements Document (SRD), Criterion 4.1-2, and found the necessary codes and standards had been adequately referenced and required. The inspectors further verified that appropriate quality requirements had been incorporated. The inspectors concluded the technical specification and RFP provided adequate technical and quality requirements for material testing services.

The inspectors examined SP-24590-BF-C00008, *Technical Specification for Excavation and Backfill,* Revision A, dated June 15, 2001, and the RFP 24590-CM-HC3-CG00-00001, *Site Preparation,* Revision A, dated June 1, 2001, to determine whether these documents provided adequate technical standards, direction, and quality requirements. The inspectors found the documents contained adequate provisions specifying fill materials, survey control, drainage control, backfill, compaction, and quality assurance requirements applicable to ITS foundation work. The inspectors concluded the documents provided a clear definition of the ITS work, clearly identified the technical requirements, and clearly defined the necessary quality assurance requirements to accomplish the ITS-related work. The procurement of the subcontractor to perform the excavation and backfill work had not been completed at the time of the inspection. However, based on the September 21, 2001, letter, this work would not be performed until implementation of the Phase B LCAR work. The inspectors will review this area during the Phase B LCAR readiness inspection.

The inspectors examined 24590-WTP-3PS-DB01-T0001, *Specification for Furnishing and Delivering Ready-Mix Concrete,* Revision A, June 28, 2001, and 25490-QL-SRA-DB50-00002, *Construction Services Subcontract for Concrete Batch Plant, Aggregate, and Ready Mix Production*, Revision A, July 2001, and concluded the specification and subcontract contained adequate technical and quality assurance provisions. The subcontract had not yet been awarded and the Contractor's QA organization had not yet performed the required QA program reviews to place a successful bidder on the ASL. Based on the September 21, 2001, letter, this was work is also part of the Phase B LCAR work and will be assessed during the Phase B LCAR readiness inspection.

In the area of firewater system design and construction, the inspectors examined the following Contractor documents:

- DB-W375-EG00001, *Basis of Design*, Revision 3, December 27, 2000
- 24590-BOF-3SS-PZ41-T0001, *Specification for Underground Fire Protection Piping Mains*, Revision A, July 11, 2001
- DWG-24590-BF-C000010, *Fire Water Yard Piping Sections and Details*, Revision A, June 6, 2001
- 24590-BOF-M6-930-00001, *P&ID Fire Protection System Fire Water Main Loop*, Revision A, (not yet dated because the drawing was still in process of review and approval)
- 24590-WTP-GPP-CON-3502, *Underground Piping Installation*, Revision 0, (not yet dated because the procedure was still in process of review and approval).

The inspectors selected several requirements from NFPA Standard 24, *Standard for the Installation of Private Fire Service Mains and their Appurtenances*, 1995 Edition and DOE-STD-1066-99, *DOE Standard Fire Protection Design Criteria*, July 1999, to determine whether the Contractor had appropriately implemented the requirements in the design. The inspectors verified the requirements selected had been implemented in the design of the underground firewater system with the following exceptions: 1) distances from supply lines to hydrants, 2) distances between control valves on main distribution loops, and 3) location of sprinkler system lead-ins as close as practical to building entry points. These could not be verified because the size of the building footprints was still in the design stage (Pretreatment and Laboratory buildings). The procedure for underground piping installation, with the addition of flushing requirements added at the direction of the Construction Manager, provided adequate direction for the installation of underground firewater piping. The Contractor was still in the process of establishing plans for conducting the periodic inspections, tests, and maintenance activities for the firewater loop and hydrants once they are placed in service, as required by NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 1998 Edition. Based on the September 21, 2001, letter, this was not in the Phase A LCAR work scope and will be reviewed further during the future Phase B LCAR readiness inspection.

1.7.3 Conclusions

The inspectors concluded the Contractor had established adequate controls governing the execution of construction activities and oversight of subcontractor construction activities. The Contractor established adequate technical specifications providing technical and QA requirements, provided adequate information in RFP documents, and provided an underground fire water system design implementing the requirements of NFPA and DOE standards.

1.8 Adequacy of Radiological Control Program and Implementation (ITP I-127, I-140, I-145)

1.8.1 Inspection Scope

The inspectors reviewed the Contractor's Radiological Control Program (RCP) to determine if it had been developed and implemented at a level consistent with the anticipated radiological hazards that may be encountered during limited construction activities. The inspectors also assessed if the RCP complied with the requirements of the Radiation Protection Program (RPP) and other AB requirements. Emphasis was placed on the provisions of the RCP to identify and control contamination that could be uncovered during excavation activities or that could be transported onsite by wind, animals, or other unforeseen means.

1.8.2 Observations and Assessments

The inspectors reviewed the following procedures and documents:

- BNFL-TWP-SER-003, *Radiation Protection Program for Design and Construction*, Revision 8, June 20, 2001
- 24590-WTP-PL-NS-01-001, *Radiological Control Program*, Revision 0, August 16, 2001
- MN-24590-01-00001, *Waste Treatment Plant Radiological Control Manual*, Revision 0, August 14, 2001
- SP-24590BF-C00008, *River Protection Project-Waste Treatment Plant Technical Specification for Excavation and Backfill*, Revision A, June 15, 2001
- *Purchase Requisition* # 24590-CM-MRA-W000-00013, June 20, 2001
- *Purchase Requisition* # 24590-CM-MRA-USSC-00002, August 9, 2001
- 24590-WTP-MAR-ESH-01-003, *Management Assessment Report for Radiological Safety Engineering*, Revision 0, August 10, 2001

- 24590-WTP-RPT-G-01-002, *Readiness Self-Evaluation of Limited Construction Authorization Request Activities*, Revision 0, August 15, 2001
- 24590-WTP-GPP-SIND-005, *Lessons Learned*, Revision 0, August 20, 2001
- 24590-WTP-GPP-SIND-001, *Reporting Occurrences in Accordance With DOE Order 232.1A,* Revision 0, August 10, 2001
- K13PO51, *Stop Work*, Revision 3, January 31, 2001
- K72P528, *Evaluation of Soil Contamination Areas*, Revision 0, November 21, 2001
- K72P523, *Required Radiological Surveillance*, Revision 0, November 21, 2001
- K72P520, *Skin and Clothing Contamination*, Revision 0, November 21, 2001
- K72P524, *Performance and Documentation of Radiological Surveys*, Revision 0, November 21, 2001
- K72P532, *Establishment and Management of Radioactive Material Storage Areas*, Revision 0, November 21, 2001
- K72P527, *Release Surveys for Tools, Materials and Equipment*, Revision 0, November 21, 2001
- K72P536, *Contamination Area Controls*, Revision 0, November 21, 2001
- K72P518, *Area Dosimetry*, Revision 0, November 21, 2001
- K72P531, *Radiological Posting*, Revision 0, November 21, 2001
- K72P525, *Contaminated Wildlife or Vegetation*, Revision 0, November 21, 2001
- K72P533, *Radioactive Material Labeling*, Revision 0, November 21, 2001
- RPP-5579, RCI-80, *GM Portable Survey Instrument*, Revision 0, November 15, 2000
- RPP-5779, RCI-81, *Portable Alpha Meter (Pam)*, Revision 0, November 15, 2000
- RPP-5779, RCI-85, *Eberline RO-3B (CP),* Revision 0, November 15, 2000
- RPP-5779, RCI-86, *The Bicron Micro Rem Meter,* Revision 0, November 15, 2000.

Safety Criterion 5.0-1 of the *Safety Requirements Document* (SRD), (BNFL-5193-SRD-01-02, Revision 4, Volume II) required the Contractor's RCP to address all items in 10 CFR 835 plus the additional safety criterion in Section 5.1. The *Integrated Safety Management Plan* (ISMP),

Section 2.3.1, identified ten components to be included in the RCP. The inspectors examined the Contractor's RCP to verify that all required elements were addressed. The inspectors found the RCP consisted of the following three elements: the Radiation Protection Program, the Waste Treatment Plant Radiological Control Manual (WTPRCM), and implementing procedures. From review of the documents described above, the inspectors determined all required elements of the RCP were addressed.

The Contractor provided a description of the RCP in the *Radiological Control Program*. This document gave an overall description of the RCP and generally identified where within the RCP the required elements were addressed. The inspectors review of the *Radiological Control Program* document identified four program elements required by the ISMP (training of personnel to procedures, maintenance of records, lessons learned program, and performance of reviews and audits) that were not specifically addressed within the document. The inspectors verified these four elements did exist within other RCP documents, but merely were not addressed in the *Radiological Control Program* description document. The Contractor agreed that to be all-inclusive, this description document should address these four elements and indicated they planned to incorporate these elements in the RCP description documents during the next revision.

The inspectors reviewed the Contractor's state of readiness to implement the documented RCP. The Radiological Control Manager informed the inspectors the WTP construction site would generally be considered a non-radiological work environment. After the initial site survey to confirm the site as a non-radiological work environment, the Contractor planned to monitor the site during construction to identify and control potential legacy radioactive material or environmentally transported contamination. Any radioactive contamination that could not be cleaned up by a Radiological Control Technician (RCT) within eight hours, or required extensive remediation would be considered beyond the scope of the existing RCP and would result in the stoppage of work in the affected area and notification of the OSR. The Contractor's implementation of the RCP was to be commensurate with the above stated approach. The inspectors noted the Contractor's approved RPP allowed for cleanup and disposal of detected materials without regard to the extent of cleanup. However, in a letter to DOE dated July 27, 2001 (CCN: 021704), the Contractor committed to the above stated limitation of clean up activities. This letter also provided details of the Contractor's planned monitoring of the site during construction.

The inspectors determined the Contractor had completed the measures necessary to support the scope of work under the LCAR. This included completion and issuance of necessary procedures (see above listing) as well as assuring adequate trained and qualified staff. During the inspectors' review of the procedures, no significant issues were identified. The procedures met the requirements of the RPP and 10 CFR 835. The procedures indicated, that details of site monitoring and surveys were provided in *Scheduled Radiation Survey Task Description,* documents. The Contractor had prepared five *Task Descriptions* to implement the site radiological survey program. The inspectors found the extent of the required surveys to be consistent with what was described in the Contractor's letters to DOE dated July 3, 2001 (CCN: 021158), July 19, 2001 (CCN: 021299), and July 27, 2001 (CCN: 021704). The inspectors noted the *Task Descriptions* were somewhat general and appeared to leave much latitude to the individuals performing the surveys. The Contractor stated the RCTs, who would be performing

the surveys, had sufficient expertise and knowledge of site conditions to adequately implement the procedures. The inspectors interviewed both the involved technicians and concluded the individuals had a good understanding of the *Task Descriptions,* the instrumentation to be used, and the type, frequency, and location of surveys, and overall appeared to have the requisite knowledge and expertise.

The Contractor had issued a purchase requisition (24590-CM-MRA-USSC-00002) to acquire the necessary supplies for posting, labeling, barriers, waste packaging, etc. to support the presence of radiological conditions. The Contractor had also issued a purchase requisition (24590-CM-MRA-W000-00013) for instrumentation service. Pacific Northwest National Laboratory (PNNL) was selected to provide complete instrument service and provide calibrated instruments as well as perform daily source checks. The Contractor would pickup and return survey instruments on a daily basis. The Contractor had also provided for a lock box for storage of small amounts of radioactive waste. The inspectors concluded that the Contractor had adequately addressed radiological material needs.

The Contractor had fully staffed the radiological control organization. The staff consisted of the Manager, one lead radiological safety engineer, and eight staff radiological safety engineers (RSE). Two of the radiological safety engineers also filled positions as RCTs (i.e., they had a separate job description for the RCTs duties). The inspectors reviewed training and qualification records for four of the RSEs, including the two who also had RCT responsibilities. Each of the individuals had qualifications consistent with their job descriptions and training records were complete. Initially, the inspectors were not able to determine if the individuals acting as RCTs met the necessary training requirements for that position. Article 642 of the WTPRCM stated in part, "Radiological Control Technicians qualifications consists of the standardized core course training material, on-the-job training per the Qualification Standards, and passing both a final comprehensive written and final Oral Examination Board." Requirement 21 of Appendix A of the RPP committed the Contractor to the training requirements of the WTPRCM. During the initial inspection, the Contractor stated it had not developed a training program to implement the requirements of Article 642 of the WTPRCM. The Contractor had specifically hired two individuals who by previous Hanford site experience had been considered RCT qualified and the Contractor planned to give each an oral examination board. The Contractor acknowledged it was not possible from existing training records to determine if the individuals' training met the intent of Article 642.

The inspectors interviewed each of the RCTs. Both individuals appeared to have the necessary qualifications to fulfill their responsibilities as onsite RCTs. However, both individuals acknowledged their continuing education requirements for RCTs had lapsed at the time of the Contractor hired them and their oral board exam requalification had elapsed. They also acknowledged their training records did not clearly substantiate they had completed all the requirements for RCT qualification. In addition, the "Work Restriction" documentation (required by 24590-WTP-GPP-CTRG-0020, *Training*) provided no indication the RCTs were restricted from performing RCT work until the RCT training could be completed. The Contractor's initial readiness self-evaluation had also identified this issue. The Contractor acknowledged the weakness in the RCT training and qualification program and recognized the need for action prior to allowing the RCTs to perform active work as RCTs.

Following actions taken by the Contractor to address the RCT training and Qualification issue, the inspectors observed documentation showing the Contractor had developed an RCT qualification program that contained the RCT continuing education requirements; the Contractor had updated the RCT qualification program so it incorporated utilization of the already developed Hanford Site RCT continuing education program. This RCT continuing education requirement was added to each of the RCTs' Employee Training Profiles and the Contractor provided documentation that the RCTs had completed the course in July and August 2001. The inspectors also observed RCT oral examination board signoff sheets had been completed for the two RCTs. The Contractor had obtained the documentation necessary to show the RCTs' qualification requirements had been met during previous employment (i.e., training modules showing training content and associated module numbers that could to be traced to the RCTs' previous employer list of completed modules). The issue regarding the RCT "Work Restriction" program for missing RCT training was addressed by the Contractor through issuance of a letter by the Radiological Control Manager to the RCT training files that stated the RCTs had completed their qualification program. Based on the above information, the inspectors found the Contractor had satisfactorily specified an RCT qualification program and verified the RCTs were appropriately qualified. No additional concerns were identified.

The inspectors reviewed the tri-annual audit program required by 10 CFR 835.102 and found the Contractor was in the process of finalizing the audit schedule. The Contractor was prioritizing audit items to match activities to be performed during construction. The inspectors concluded the Contractor had given adequate attention to the audit program.

1.8.3 Conclusions

Overall, the Contractor had developed and was prepared to implement a radiological control program commensurate with the potential radiological hazards that might occur during the initial site survey and subsequent LCAR activities. The inspectors found that the Contractor's RCP complied with the commitments in the RPP, LCAR, ISMP, QAM, and SRD.

1.9 Adequacy of Training and Qualification of Personnel (ITP I-127, I-106, I-150)

1.9.1 Inspection Scope

The inspectors reviewed the Contractor's plans and procedures for ensuring construction workers would be trained and qualified to perform work assignments commensurate with their positions. The training and qualifications of quality control and radiological control personnel involved in construction activities is addressed in Sections 1.4 and 1.8, respectively, of this inspection report.

1.9.2 Observations and Assessments

During the initial inspection, the inspectors reviewed the following procedures and documents:

- 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual,* Revision A, June 11, 2001

- 24590-WTP-GPP-CTRG-002, *Training*, Revision 0, August 20, 2001
- 24590-WTP-GPP-CON-1301, *Construction Training*, Revision 0, August 15, 2001
- *Construction Training Matrix-Non Manual Job Specific Training*
- Draft *Construction Training Matrix-Required Position Procedure Training*
- Draft *Construction Manual Training Matrix*.

The *Training* procedure identified above, defined the overall training program for the WTP project and deferred to the Construction Department development of a training program for construction craft workers. The *Construction Training* procedure established the training program for both manual and non-manual construction personnel including subcontract personnel. The inspectors examined the *Construction Training* procedure and compared it to the training requirements specified in the QAM. The inspectors found the procedure to be consistent with Policy Q-02.2, "Personnel Training and Qualification," as well as Policy Q-05.1, "Instructions, Procedures, and Drawings," of the QAM. Based on this information, the inspectors found the structure of the construction training program adequate to accomplish the objective identified in Section 1.3.12, "Training," of the ISMP, (i.e., that personnel involved in the project have sufficient knowledge to safely fulfill the roles and responsibilities of their assigned tasks).

Appendices 1 through 4 of the *Construction Training* procedure identified a "Sample" training matrix for construction and "Sample" training outlines for orientation training for manual, non-manual, and subcontractor employees. These documents, once prepared, would identify the specific training to be provided to personnel. At the time of the initial inspection, the Contractor was developing the required position specific and project training needs for incorporation into the construction-training matrix. The training modules associated with the orientation training were also under development as was the construction-training database. The Contractor planned to conduct non-manual staff training (for staff involved in LCAR activities) during the month of September. The inspectors noted the sample "Non-Manual Employee Orientation Training Outline" did not identify Hanford General Employee Training (HGET) training, which would be required for non-manual employees needing WTP site access. HGET training incorporated the radiological safety training required by 10 CFR 835.901(a)(1) for employees that would have unescorted access to controlled areas, as is the case on the Hanford site. The Area Training Manager stated this issue would be addressed.

The inspectors examined the training matrix and completion status for two Contractor civil surveyors who were to perform site civil survey activities, and four QC inspectors and found these acceptable.

On September 12, 2001, the inspectors reviewed the final sign-off package for the Safety and Health Orientation training, dated September 12, 2001. This orientation training was presented for the first time on September 14, 2001. On September 20, 2001, the inspectors reviewed the following documents:

- *Construction Training Matrix – Required Position Procedure Training*, September 13 through September 17, 2001

- *Employee Training Profile for the Waste Treatment Plant Project*, dated September 19, 2001

- Form, *Non-Manual/Manual WTP Construction Site Request for Permanent Badge Form (DOE Security Badge),* Revision 0, September 19, 2001

- Form, *Subcontractor/Vendor WTP Construction Site Request for Permanent Badge Form (DOE Security Badge),* Revision 0, September 20, 2001

- List, *LCAR Identified Personnel*, approved September 19, 2001

- *Training Attendance Record for Safety and Health Orientation Training*, (Form 24590-F0005, Revision 0, August 16, 2001), presented September 14, 2001

- Training package for the Safety and Health Orientation training, September 12, 2001

- 24590-WTP-GPP-CON-2101, *WTP Construction Site Security Badges*, Revision 0, September 27, 2001.

Training for RPP-WTP personnel was divided into two categories: project-specific training and construction training. The majority of training for LCAR activities fell into the category of construction training. Project-specific training would be identified for each position in the "Employee Training Profile." Construction training was identified through the Construction Training Matrices for Manual and Non-Manual employees.

As of September 20, 2001, the Safety and Health Orientation training as well as the construction training matrices for manual and non-manual employees were finalized and approved by management. The inspectors observed final sign-offs for seven construction training matrices and determined them to be complete. The managers of the employees concurred by signature that the training matrices specified the appropriate training classes and methods for employees they manage.

Contractor construction management identified those personnel assigned to the construction organization and involved in LCAR activities. The listing of "LCAR Identified Personnel" had received concurrence from the Field Engineering Manager, Field Quality Control Manager, Subcontract Manager, Field Project Controls Manager, Field Procurement Manager, ES&H Manager, and General Superintendent, and was approved by the Site Manager. The Contractor indicated LCAR identified personnel would require access to the RPP-WTP Site and would be required to receive Safety and Health Orientation training. The inspectors reviewed training attendance records and compared these records to the list of "LCAR Identified Personnel." As of September 20, 2001, 45 of the 59 personnel identified as requiring the Safety and Health Orientation had received the initial training. Interviews with key personnel indicated that additional personnel would be required to attend another Safety and Health Orientation training session, scheduled for September 21, 2001. Subcontractor Health and Safety Orientation training was scheduled for September 27, 2001.

On September 21, 2001, the inspectors attended the five-hour Safety and Health Orientation training. The orientation followed the outline specified in the *Construction Training* procedure. The inspectors found the orientation to be a good overall briefing of health and safety issues expected during limited construction activities. The Contractor covered expectations, roles and responsibilities, policies, fall protection, fire prevention, personal protective equipment, Job Hazard Analysis, Safety Task Analysis Risk Reduction Talk (STARRT) requirements, back injury prevention, hazard communication, scaffolds, ladders, confined space, lock and tag, cranes and rigging, electrical safety, and other topics.

1.9.3 Conclusions

Based on the above information, the inspectors found the Contractor had procedures in place that adequately defined the training and qualification program applicable to construction workers. The Contractor had a program in place to ensure new construction hires had appropriate qualifications for the positions they would fill. Construction staff training was commensurate with job assignments.

1.10 Adequacy of Construction Occurrence Reporting Plan Implementation (ITP I-127)

1.10.1 Inspection Scope

The inspectors reviewed the recently issued occurrence reporting procedure (24590-WTP-GPP-SIND-001, *Reporting Occurrences*, Revision 0, August 10, 2001) in accordance with DOE Order 232.1A. The review was conducted to verify the Contractor had developed appropriate procedures to implement the Construction Occurrence Reporting Plan for Limited Construction submitted in a letter dated July 26, 2001 (CCN: 021691). This reporting plan was submitted to satisfy the WTP Contract requirements of Table S7-1, Radiological, Nuclear, and Process Safety Deliverables. The above procedure provided implementing details for all reportable occurrences including Environmental, Industrial Health and Safety, and Radiological, Nuclear, and Process Safety. The inspectors focused their review on how the Contractor implemented the commitments made to satisfy the Table S7-1 deliverable. The inspectors could not verify implementation of the procedure since the occurrence reporting process had not been used to date.

1.10.2 Observations and Assessments

The inspectors compared the *Reporting Occurrences* procedure with the Contractor's Construction Occurrence Reporting Plan for Limited Construction and found the commitments had been appropriately captured in the above procedure with one exception. In the letter dated July 26, 2001, BNI committed to reporting, as an Off-Normal occurrence:

> *During excavation activities, detection of evenly distributed contamination with detection readings greater than 500,000 dpm/probe beta/gamma, or greater than 200 dpm/probe above background alpha.*

The inspectors could not find where this reporting criterion was covered in Attachment A, Occurrence Categories and Criteria or the Contractor's *Reporting Occurrences* procedure. At the time of the inspection, the Contractor had submitted to ORP for review and comment, the above implementing procedure. This review was being conducted to meet the requirements contained in Section C, Table C.5-1.1, Deliverable 1.8, of the Contract. The DOE team performing this review also concluded this reporting criterion was not discussed in Attachment A. The review team provided this comment (and several additional comments) to the Contractor in a letter dated September 4, 2001 (01-OSR-0339). The Contractor subsequently addressed the review team comments and the DOE approved the Contractor's occurrence reporting procedure in a letter dated September 20, 2001 (01-OSR-0369). The inspectors also verified the revised procedure incorporated the above reporting criterion.

1.10.3 Conclusions

From review of the implementing procedure for occurrence reporting, the inspectors concluded the Contractor captured the commitments made in the Construction Occurrence Reporting Plan for Limited Construction submitted to the ORP on July 26, 2001. The inspectors also concluded, based on proper implementation of this procedure, radiological, nuclear, and process safety occurrences of interest to the ORP should be reported and entered into the appropriate reporting systems.

1.11 Adequacy of Construction Emergency Response Implementation (ITP I-127, I-160)

1.11.1 Inspection Scope

On July 30, 2001, ORP issued a letter to the Contractor (01-OSR-0280) informing the Contractor of the ORP's intent to issue a Contract change that would require the Contractor to develop and implement a Construction Emergency Response Plan compliant with applicable requirements of the *Hanford Emergency Management Plan*, DOE/RL-94-02, and the operational emergency and abnormal event reporting requirements of HFID 232.1B, *Notification and Reporting of Operational Information.* The July 30, 2001, letter contained as an attachment, requirements the Construction Emergency Response Plan needed to address to be compliant with HFID 232.1B and DOE/RL-94-02, provided the construction site met the definition of an Administrative Facility. On September 24, 2001, ORP issued a letter to the Contractor (01-AMIC-228), instructing the Contractor to implement this Contract change. The Contractor prepared and the inspectors reviewed the Contractor's construction *Emergency Management Program* and *Emergency Action Plan*. In addition, the inspectors assessed the Contractor's implementation of these documents to determine if the Contractor had designated and trained emergency response staff and had appropriate emergency response equipment and plans for facility and/or staging areas.

1.11.2 Observations and Assessments

As stated above, the inspectors reviewed the following documents:

- 24590-WTP-GPP-SIND-019, *Emergency Management Program*, Revision 0, August 20, 2001, and Revision 1, September 27, 2001.

- 24590-WTP-GPP-SIND-003, *Emergency Action Plan*, Revision 0, August 17, 2001, and Revision 1, September 27, 2001.

The *Emergency Management Program* (*Program*) was prepared by the Contractor to meet the proposed Contract requirement, stated in the July 30, 2001 letter, to develop a Construction Emergency Response Plan. The *Emergency Action Plan (Plan)* was an implementing procedure that included as appendices, emergency response organization (ERO) position specific instruction.

The inspectors found the *Program* to have addressed the requirements of an Administrative Facility contained in DOE/RL-94-02. The Contractor's Hazards Survey, in Appendix 10 of the *Program*, documented the potential hazards associated with the facility and provided the basis for concluding the facility met the classification of an Administrative Facility, as described in DOE/RL-94-02. The *Program* required the Contractor to periodically revise the hazards survey as necessary when: (1) project tasks or operations change, (2) inventories are at risk, and (3) inventories change. The hazards survey, at a minimum, was required to be revised every three years.

The inspectors verified the *Program* addressed the requirements found in the attachment to the July 30, 2001, letter and the requirements of 29 CFR 1938.35. Several issues, however, were identified with the *Program* and *Plan*, and were discussed with the Industrial Safety Manager. These issues included:

- The two documents use the general terms "Abnormal or emergency incident" or "abnormal event" to describe initiating events that might activate emergency response. For example, Section 3.4.2.1, "Evacuation," of the *Plan*, stated personnel shall evacuate in the event of an abnormal event. However, the term "Abnormal Event" was described in Appendix 5, "Categorization and Notifications," of the *Program*, as a variety of events that, while not creating or indicating an emergency condition, may generate public concern or media interest. Because the term "Abnormal Event" addressed non-emergency conditions, the Contractor should consider not using the word "Abnormal" to describe potential events or incidents that could activate the emergency response plan.

- Section 3.3.6.1, of the *Program*, discussed the need to have Emergency Evacuation Information Boards, but failed to identify who was responsible for maintaining the boards. This was a requirement of the attachment to letter 01-OSR-0280, discussed above.

- Attachment 1, "RCRA Emergency Plan Implementing and Notification Criteria," and Attachment 2, "Base Program Operational Emergency Criteria," of the *Plan* discussed in

general terms, criteria, if exceeded, which would result in notifications to off-site entities. However, some of these criteria were not defined nor were references provided for the ERO staff to use during events. For example, Criteria 2 in Attachment 1 stated, "The unplanned spill or release involved a dangerous waste;" however, "dangerous waste" was not defined. Step 1.a. of Attachment 2 discussed "uncontrolled personnel exposures exceeding protective action criteria;" however, the protective action criteria were not provided or referenced. Step 2.a. of Attachment 2 stated "any actual or potential release of hazardous material or regulated pollutant to the environment;" however these materials or pollutants were not defined. Step 3.d. of Attachment 2 discussed "Actual or loss of a Category I or II quantity of Special Nuclear Materials;" however, Category I or II quantity of Special Nuclear Materials was not defined.

- Appendix 6, "Staging [Area] Manager Emergency Response," Section 5.6, stated to "Identify all personnel with vehicle keys in their immediate possession. If a Site evacuation is necessary, match up people with rides and verify destination and safe routes of travel with each driver." The requirement to verify all keys appeared unreasonable for a construction site with potentially thousands of workers and could delay an evacuation.

In addition, on September 13, 2001, the DOE Richland Operations Office (RL) provided the inspectors with comments regarding the *Plan* and *Program* that the inspectors provided to the Contractor during the inspection (provided as Attachment 1 and 2 to this report respectively). The Contractor subsequently addressed both the inspectors' and RL's comments in revision 1 to the *Program* and *Plan*, both dated September 27, 2001.

The inspectors verified designated emergency response organization staff were trained and qualified to perform their duties, information notebooks were prepared for the designated primary and backup Project Emergency Directors (PEDs), a letter had been sent to the Onsite Notification Center (ONC) notifying them of the names and phone numbers of the designated PEDs, and emergency evacuation information boards and sirens were in place.

1.11.3 Conclusions

Revision 1 of the Contractor's *Emergency Management Program* and *Emergency Action Plan* were adequate to support construction. The Contractor had trained staff and implemented emergency response provisions necessary to support start of limited construction.

1.12 Adequacy of the Closure of Inspection Items (Inspection Administrative Procedure IAP A-105 and A-106)

Selected inspection follow-up items, identified in previous inspection or evaluation reports, were reviewed to determine if they could be closed. The inspectors reviewed the Contractor's commitments provided in its responses to these inspection follow-up items and other information provided. The inspectors verified by work observation, records review, and other means as appropriate, that the corrective actions stated were appropriately completed.

1.12.1 (Closed) IR-00-002-01-IFI, "Five procedure weaknesses in the Contractor's Employee Concerns program (ECP) implementing procedures and documents." The results of an ECP Inspection were documented in Inspection Report (IR) IR-00-002, March 10, 2000. During the inspection, an inspection follow-up item, IR-0-002-01-IFI, was identified to track resolution of ECP implementing procedure weaknesses. Section 1.5.2.2.2, of Inspection Report IR-01-001, June 18, 2001, discussed partial closure of this IFI. Two of the five weaknesses discussed in the IFI were closed.

During this inspection, the inspectors were provided a memorandum (CCN: 022332, August 15, 2001) that outlined the actions taken by the Contractor to support closure of the remaining three open procedure weaknesses. The inspectors reviewed the information provided in the memorandum and the referenced procedures and concluded the three remaining procedure weaknesses should be closed. Review for closure of the remaining procedural weaknesses is summarized below.

The first remaining weakness concerned the ECP implementing procedures not including guidance that addressed the process by which subcontractors would implement an ECP, nor the mechanism for overseeing each subcontractor's use of a program. The inspectors reviewed the revised procedure (24590-WTP-GPP-HR-005, *Employee Concerns Program*, Revision 0, August 16, 2001) and found the applicable section of the procedure had been modified to address the ECP flow-down requirement between the Contractor/owner to all subcontractors. The inspectors also verified the procedure requirement was being implemented by the procurement organization. The inspectors reviewed a sample Technical Services Subcontract and found the requirements for an employee concerns program was addressed in the special conditions section of the contract. This portion of the contract ensured the subcontractor would address the need for an employee concerns program. The inspectors found this additional clarification addressed the concern and this weakness is considered closed.

The second remaining weakness concerned the ECP implementing procedures not providing adequate guidance for prioritization and evaluation of concerns during the upcoming construction and operation phase of the project. The inspectors reviewed the revised *Employee Concerns Program* procedure and found Section 3.3.3, "Process of Raising a Concern," had been modified to include additional guidance to address imminent danger and stop work actions. The inspectors found this additional clarification addressed the concern and this weakness is considered closed.

The third remaining weakness concerned the ECP implementing procedures not containing adequate guidance for handling concerns by exiting or dismissed employees. During the previous inspection that evaluated this weakness, the inspectors found procedures had been appropriately modified to address this issue. However, the revised procedures had been deleted and new procedures were being developed to address the employee separation process. Since the last inspection, the Contractor had revised the ECP procedure and the employee termination procedure. The inspectors reviewed the termination procedure (24590-WTP-GPP-HR-002, *RPP-WTP Termination of Employment*, Revision 0, August 30, 2001). The procedure was found to provide

adequate guidance for handling concerns for exiting or dismissed employees and this weakness is considered closed.

In summary, the inspectors reviewed the above material and found it addressed the remaining three open weaknesses discussed in IR-00-002-01-IFI. This inspection follow-up item is considered closed.

1.12.2 (Closed) IR-01-001-OTH, "Corrective Actions regarding the Contractor's training and qualification process." In response to ORP/OSR-2001-03, Revision 0, *Evaluation of Bechtel National, Inc. Capability to Change the RPP-WTP Authorization Basis,* March 19, 2001, the Contractor committed, in a letter to ORP (CCN 019097), to corrective actions regarding the Contractor's training and qualification process. An "Other" inspection item was assigned (IR-01-001-OTH) to track resolution of this commitment. In a letter dated June 18, 2001, the OSR forwarded the results of an inspection performed on the BNI Training and Qualification Program. Section 1.5.2.3.2, of IR-01-001, discussed the review that was performed by the inspectors to verify implementation of four commitments made by the Contractor to address corrective actions regarding their training and qualification process. The inspectors could not verify implementation of those commitments and as a result the item remained open.

During this inspection, the inspectors were provided additional information to demonstrate the commitments had been fully implemented. The inspectors reviewed the information provided by the Contractor and concluded the commitments had been fully implemented and this item should be closed. Review for closure of the Contractor's commitments is summarized below:

1. Commitment: The qualification process used to establish the List of Qualified Individuals (LQI) will be proceduralized and the LQI will remain as a project record.

   The inspectors reviewed the training procedure (24590-WTP-GPP-CTRG-002, *Training*, Revision 2, August 20, 2001) and found Section 3.3, "List of Qualified Individuals (LQI) Processing," proceduralized the LQI process. The inspectors also found the process was documented in Appendix L, "LQI Review Documentation," and this documentation was required to be retained in accordance with Project Document Control procedures as discussed in Section 4.0, "Records," of the above procedure.

2. Commitment: A review committee panel consisting of the hiring manager and Training Manager (TM) will review each individual's training and qualification folder and accept it after ascertaining that it is adequate and complete.

   The inspectors reviewed Section 3.3 of the above procedure and found this section of the procedure adequately discussed the use of a review committee to ascertain the adequacy of each individual's training and qualification.

3. Commitment: In parallel with corrective actions to address DR-W375-01-QA-00009, which concerned "deficiencies in Project personnel (staff augmentation personnel) qualification records and verification of education and experience," training procedures will be consolidated and upgraded. Revised procedures will incorporate the new training record and acceptance process into department roles and responsibilities.

   The actions taken to address this commitment are listed below in commitment 4.

4. Commitment: The action plan to address the items contained in DR-W375-01-QA-00009, is due March 30, 2001.

   The inspectors were provided with documentation that demonstrated closure of DR-375-01-QA-00009. The documentation showed that this deficiency report (DR) was now being tracked as DR-24590-01-QA00006, February 5, 2001. The DR consisted of seven corrective actions. The last corrective action was completed on May 3, 2001, and was independently verified as complete on May 9, 2001. The inspectors found the corrective actions described in the above DR adequately addressed the issue discussed in commitment 3 and 4 above. The training procedures were consolidated and upgraded and resulted in the training procedure discussed in commitment 1 above. The inspectors also found Section 3.1, "Responsibilities," of the revised training procedure, adequately addressed training records and their acceptance process.

Based on the above, this inspection follow-up item is closed.

1.12.3 (Open) IR-01-004-OTH, "Sixteen weaknesses identified in ORP/OSR-2001-03, Revision 0." The OSR evaluation report, ORP/OSR-2001-03, Revision 0, *Evaluation of Bechtel National, Inc. Capability To Change the RPP-WTP Authorization Basis,* March 19, 2001, listed, in Section 8, "Conclusions," twelve weaknesses that BNI should correct, and specified when, in most cases at the next routine document revision, the corrections should be made. Also listed, were four open items from the OSR evaluation of the CHG transition (RL/REG-2000-26) performed in November 2000. Section 1.5.2.2.3 of IR-01-001 discussed the review that was performed by the inspectors to verify closure of these sixteen items. During the above inspection, the inspectors closed six of the sixteen items. The remaining ten items were to be closed during future inspection activities. During this inspection, one of the remaining ten items was evaluated by the inspectors and is considered closed. Review for closure is summarized below. The remaining nine open items will be closed during future OSR inspections.

The item reviewed by the inspectors was describe in IR-01-001 as follows:

"8. BNI should evaluate the Radiological Safety Manager position description to consider inclusion of the Tank Farm Radiological Control Manual (TFRCM) recommended qualification elements prior to commencing limited construction."

The inspectors reviewed the following documents:

- Form, *Job Description*, *Manager, Radiological & Fire Safety*, August 1, 2001
- Form, *Job Description, Radiological Operations Lead*, March 6, 2001
- 24590-WTP-MN-ESH-01-001, *Waste Treatment Plant Radiological Control Manual*, Revision 0, August 14, 2001
- ES&H Organization Chart, August 21, 2001.

The inspectors found that the Radiological Safety Manager's position description had been updated to include qualifications elements specified in the Waste Treatment Plant Radiological Control Manual (WTPRCM). (The WTPRCM superceded the TFRCM). The inspectors consider the update to the Radiological Safety Manager's position description adequate. This item is closed.

2.0 EXIT MEETING SUMMARY

The inspectors presented preliminary inspection results to members of Contractor management at a summary meeting on August 24, 2001. At the time, the inspectors were unable to provide an exit meeting because all of the limited construction preparation activities had not been completed. A follow-up inspection was completed the week of September 24, 2001, and the results provided to members of Contractor management at an exit meeting on September 26, 2001. The Contractor acknowledged the observations and conclusions.

The inspectors asked the Contractor whether any materials examined during the inspection should be considered limited rights data. The Contractor stated that no limited rights data was examined during the inspection.

3.0 REPORT BACKGROUND INFORMATION

3.1 Partial List of Persons Contacted

R. Naventi, Project Manager
F. Beranek, Manager ES&H
D. Klein, Manager, Radiological, Nuclear, and Process Safety
E. Hughes, Deputy Engineering Manager
W. Poulson, Operations Manager
G. Schroeder, Compliance Procedures Supervisor, Procurement
M. Platt, Safety Program Lead
E. Smith, Safety Program Engineer
M. Ensminger, Quality Control Supervisor
G. Warner, Audit Supervisor
T. Meagher, Industrial Safety Manager

R. Amos, Project Field Engineering Manager
D. Trethewey, Supervisor, Document Control
W. Clements, Site Manager
R. Amos, Project Field Engineer Manager
K. Vacca, Area Training Manager
C. Herbert, Construction Training Coordinator
R. Buckner, Radiological Safety Engineer/Senior Radiological Control Technician
S. Henry, Lead Radiological Safety Engineer
L. Nelson, Radiological Safety Engineer/Senior Radiological Control Technician
M. Perks, Radiological & Fire Safety Manager
M. Rosenthal, Safety Engineer
G. Shell, Quality Assurance Manager
D. Scribner, CS&A Discipline Manager
S. Horn, CS&A Balance of Facilities (BOF) Supervisor
T. Foote, Process Assurance Supervisor
J. Blue, Procedures/Self Assessment/Training Engineer
D. Smith, Safety Engineer
J. Sanders, HVAC/Fire Protection Manager
C. McKnight, Fire Protection Supervisor
J. Rutherford, Surveillance Manager
G. Warner, Quality Assurance Audits Manager
W. Stone, Quality Assurance Evaluator
P. Tiffany, Senior Subcontracts Administration Supervisor
P. Brausen, Assistant Lead Civil Field Engineer
M. Jewell, Deputy Procurement and Property Manager
G. Kump, Piping Field Engineer
C. Herbert, Construction Training Coordinator
D. Wieczerkowski, Training Lead, alternate Project Training Administrator
S. Walter, Training Specialist
S. Diaz, Lead Civil Surveyor
D. Simpson, Area Project Engineer-BOF
R. Voke, Area Project Engineer-Pretreatment

3.2 List of Inspection Procedures Used

Inspection Administrative Procedure A-105, "Inspection Performance"

Inspection Administrative Procedure A-106, "Verification of Corrective Actions"

Inspection Technical Procedure I-104, "Design Process Assessment"

Inspection Technical Procedure I-106, "Personnel Training and Qualification Assessment"

Inspection Technical Procedure I-112, "Geotechnical/Foundations Inspection"

Inspection Technical Procedure I-127, "Readiness for Limited Construction"

Inspection Technical Procedure I-130, "Procurement Program Inspection"

Inspection Technical Procedure I-131, "Document Control and Records Management Program Inspection"

Inspection Technical Procedure I-132, "Identification and Control of Items and Processes Program Inspection"

Inspection Technical Procedure I-133, "Quality Control Program Inspection"

Inspection Technical Procedure I-137, "Inspection of Fire Protection System Construction"

Inspection Technical Procedure I-140, "Radiological Control Programmatic Assessment"

Inspection Technical Procedure I-145, "Contamination Monitoring and Control Assessment"

Inspection Technical Procedure I-150, "RCP Training and Qualification Assessment"

Inspection Technical Procedure I-160, "Industrial Health and Safety Program Inspection"

3.3 List of Items Opened, Closed, and Discussed

Opened

None.

Closed

IR-00-002-01-IFI	Follow-up	ECP procedure weaknesses.
IR-01-001-OTH	Other	Corrective Actions regarding the Contractor's training and qualification process.

Discussed

IR-01-004-OTH	Other	Evaluation (ORP/OSR-2001-03) lists 16 issues that BNI should correct.

3.4 List of Acronyms

AB	authorization basis
BOF	Balance of Facilities
BNI	Bechtel National, Inc.
DOE	U.S. Department of Energy

DR	Deficiency Report
ECP	Employee Concerns Program
ERO	Emergency Response Organization
HGET	Hanford General Employee Training
IFI	Inspection Follow-up Item
IR	Inspection Report
ISMP	Integrated Safety Management Plan
ITS	Important to Safety
LCAR	Limited Construction Authorization Request
LQI	List of Qualified Individuals
M&TE	Measuring and Test Equipment
NDE	Nondestructive Examination
NFPA	National Fire Protection Association
ONC	Onsite Notification Center
ORP	Office of River Protection
OSR	Office of Safety Regulation
OTH	Other
PED	Project Emergency Director
PNNL	Pacific Northwest National Laboratory
QA	Quality Assurance
QAM	Quality Assurance Manual
QC	Quality Control
RCP	Radiological Controls Program
RFP	Request for Proposal
RL	Richland Operations Office
RPP	Radiation Protection Plan
RPP-WTP	River Protection Project – Waste Treatment Plant
RSE	Radiological Safety Engineer
SRD	Safety Requirements Document
STARRT	Safety Task Analysis Risk Reduction Talk
TFRCM	Tank Farm Radiological Control Manual
TM	Training Manager
WTPRCM	Waste Treatment Plant Radiological Control Manual

Attachments:
1. RL comments to 24590-WTP-GPP-SIND-003_0, Emergency Action Plan
2. RL comments to 24590-WTP-GPP-SIND-019_0, Emergency Management Program

Attachment 1. RL Comments to 24590-WTP-GPP-SIND-003_0, Emergency Action Plan

#	Page/Section	Comment
1	1/Contents	Appendix 6 Title should read "Staging Area Manager Emergency Response."
2	2/3.1	First paragraph, last sentence states "This plan in conjunction with DOE/RL-94-02, is intended to demonstrate compliance with the emergency planning requirements of Washington Administrative Code (WAC) 173-303-360 for implementation during a spill, release, fire, or explosion." The WAC requirements are only applicable to RCRA (low-hazards) facilities. The WTP hazards survey as noted in the *Emergency Management Program*, Appendix 9, section 2.3, first paragraph, states: The hazards survey of the WTP limited construction determined that the construction project does not involve sufficient quantities of hazardous materials to meet either the 29 CFR 119.1910, Appendix A or 40 CFR 68.130 screening criteria. Therefore, the WTP limited construction project is classified as an "Administrative Facility", as defined in DOE/RL-94-02."
3	2/3.1	Second paragraph, first sentence states "This EAP incorporates the requirements (elements of an emergency action plan) from the above referenced regulatory requirements." Reference to WAC 173-303-360 is not applicable. See comment #2.
4	4/3.2.1	States "This plan in conjunction with DOE/RL-94-02 will be implemented to meet requirements of WAC-173-303-360(2)(d) if the RCRA notification criteria located in the RCRA Emergency Plan Implementing and Notification Criteria (Attachment 1) is met or exceeded." The WAC requirements are only applicable to RCRA (low-hazards) facilities. See comment #2.
	9/3.4.6	Section delineates "Response to Spills." If spill is defined as small spills of petroleum based products (such as lubricants, degreaser, fuels, etc.) as referenced in Table 3, there is no comment. If spill is intended to mean RCRA reportable spills then comment would be that it is not applicable in that the requirements are only applicable to RCRA (low-hazards) facilities. See comment #2.
5	10/4.0	The first paragraph uses the acronym "PDC." This acronym is not spelled out (first time used).
6	10/5.0	"References" lists "WAC 173-303-350, and 360 Washington Administrative Code, *Contingency Plan and Emergency Procedures*, and *Emergencies*." The WAC requirements are only applicable to RCRA (low-hazards) facilities. See comment #2.
7	15/Appendix 3, Emergency Response Activities Checklist	Emergency Response Activities Checklist, Immediate Activities, step 4 states "Use the guidelines in attachment 1 of this appendix to determine if an event has met the environmental reporting

#	Page/Section	Comment
		requirements of WAC-173-303-360(2)(d)." The WAC requirements are only applicable to RCRA (low-hazards) facilities. See comment #2.
8	15/Appendix 3, Emergency Response Activities Checklist	Emergency Response Activities Checklist, Follow-Up Actions, step 1 states "IF the incident involves a release, fire, or explosion, or exceeds environmental permit and you have not consulted with the WTP environmental point of contact. THEN notify the WTP environmental point of contact." This is a WAC requirement that is only applicable to RCRA (low-hazards) facilities. See comment #2.
9	17/Appendix 3, Attachment 1	The "RCRA Emergency Plan Implementing and Notification Criteria" contains WAC requirements that are only applicable to RCRA (low-hazards) facilities. See comment #2.
10	25/Appendix 6	Appendix title should read "Staging Area Manager Emergency Response."

Attachment 2. RL Comments to 24590-WTP-GPP-SIND-019_0, Emergency Management Program

#	Page/Section	Comment
1	1/Contents	There are two Appendix 6 sections – one titled "Hazards Survey" and another titled "Drills."
2	2/1.0	Third paragraph, first sentence states "The Emergency Management Program outlines…and federal regulations (*Washington Administrative Code* [WAC] 173-303-340, 350, and 360, 29 *Code of Federal Regulations* [CFR] Part 1910.38 and 1926.35), and..." Several of these requirements are only applicable to RCRA facilities. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, would not fall under RCRA requirements.
3	2/1.0	Third paragraph, third sentence states "This program and the Emergency Action Plan…meet the requirements of WAC 173-303 for contingency planning for the WTP construction project." Requirements from WAC 173–303 are applicable only to RCRA facilities. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, would not fall under RCRA requirements.
4	3/2.0	NOTE states "The WTP project is considered a RCRA Facility and further defined as an 'Administrative' Facility by DOE/RL-94-02." Previous understanding was that initially WTP would not be considered a RCRA facility as they are generally defined as a "low-hazards facility" by DOE/RL-94-02 criteria. In addition, the WTP hazards survey as noted in Appendix 9, section 2.3, first paragraph, states: The hazards survey of the WTP limited construction determined that the construction project does not involve sufficient quantities of hazardous materials to meet either the 29 CFR 119.1910, Appendix A or 40 CFR 68.130 screening criteria. Therefore, the WTP limited construction project is classified as an "Administrative Facility", as defined in DOE/RL-94-02."
5	3/2.1	Suggest switching the listing order of "Recovery" and "Response" as response actions would come before recovery actions.
6	4/3.1.1	Suggest deleting last sentence and associated bullets, and add wording which references the requirements of Appendix 6. Example: "Additional hazards survey requirements are delineated in Appendix 6."
7	5/3.1.3	Bullet titled "Initial response" uses the acronym "PED." This acronym should be spelled out as this is the first use. Additionally, the use of "PED" will now make at least three terms used on the site – already use BED and BW.
8	5/3.2	Second bullet states "Abnormal or emergency incidents are promptly recognized and classified…" This should be revised to

#	Page/Section	Comment
		state "Abnormal or emergency incidents are promptly recognized and categorized…" Classification is used to determine if the event is an Alert, Site Area Emergency, or General Emergency.
9	5/4.0	The first sentence uses the acronym "PDC." This acronym is not included in the acronym list of Appendix 1.
10	5/5.0	HFID 232.1A is listed under the heading of "DOE Orders." The HFID is a procedure. DOE O 151.1 should be listed under this heading if it is included in the contract. Suggest taking out all headings (i.e., DOE Orders, RL Procedures, State and Federal Regulations, and BNI Procedures).
11	6/5.0	"RL Procedures" may not be an appropriate heading to use for the documents cited below it. DOE/RL-94-02 is an emergency management plan; the two BNFL documents cited would not be considered RL procedures. Suggest taking out all headings (i.e., DOE Orders, RL Procedures, State and Federal Regulations, and BNI Procedures).
12	7/Appendix 1	There are several acronyms listed in this appendix that are not used in the document.
13	10/Appendix 2, 3.2.1	Fifth bullet on page states "Maintains a current list of PEDs including work and home telephone numbers, and provide this list to the Hanford Site Emergency Preparedness Organization…" The term "Hanford Site Emergency Preparedness Organization" may be confusing as to who this actually is. May want to consider the term "FH Emergency Preparedness Organization" to be more specific.
14	10/Appendix 2, 3.2.1	Eleventh bullet on page states "Review all revisions to Hanford Site emergency preparedness/response documents that included in the WPT contract…" The word "are" appears to be missing in sentence. Suggest rewriting sentence to state "Review all revisions to Hanford Site emergency preparedness/response documents that are included in the WPT contract…"
15	11/Appendix 2, 3.3.1	First sentence appears to have duplicate wording - "responsibilities for the program" - that needs to be deleted.
16	11/Appendix 2, 3.3.2	First paragraph states "emergency events requiring implementation of the contingency plan." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, would not fall under contingency plan requirements.
17	11/Appendix 2, 3.3.2	Second paragraph, first sentence states "The EAP shall be developed and maintained per DOE/RL-94-02, 29 CFR 1910.38, 1926.35, and WAC 173-303." WAC requirements are only applicable to RCRA facilities. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, would not fall under WAC requirements.
18	12/ Appendix 2, 3.3.4	Under "EXCEPTION" several requirements are listed for when the EAP and emergency response procedures are to be revised. Several of these requirements are from WAC 173–303 which are applicable

#	Page/Section	Comment
		only to RCRA facilities. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, would not fall under RCRA requirements.
19	13/ Appendix 2, 3.5	The first three bullets identify area/project alarms and systems that WTP is responsible for ensuring that preventative maintenance is performed. These alarms and systems are part of the HSEAS for which the FH Emergency Preparedness organization has the responsibility for preventative maintenance.
20	14/ Appendix 3, 3.2.2	Second paragraph, second sentence states "…WTP ERO list maintained by the Site Emergency Preparedness Organization." DOE/RL-94-02 (section 2.2) uses the wording "listing located in the POC" [Patrol Operations Center]. Suggest rewording sentence to state "…WTP ERO listing located in the Patrol Operations Center (POC)."
21	14/ Appendix 3, 3.2.2	Second paragraph, third sentence states "If warranted, the PED will make the categorization decisions (i.e., *Resource Conservation and Recovery Act of 1996* [RCRA] Contingency Plan implementation requirements have been met) prior to responding to the scene." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA contingency plan Implementation requirements would not be applicable to an administrative facility.
22	14/ Appendix 3, 3.2.2	Second paragraph, fourth sentence states "If initial attempts to reach the PED fail, the IC will direct the Occurrence Notification Center (ONC) Duty Officer to make the categorization decision or determine if the RCRA Contingency Plan implementation requirements have been met." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA contingency plan Implementation requirements would not be applicable to an administrative facility. Also, DOE/RL-94-02 (section 2.2) uses the wording "the IC may direct the ONC Duty Officer…" As such, suggest rewording sentence to state "…the IC may direct the Occurrence Notification Center…"
23	14/ Appendix 3, 3.2.2	This section does not contain the specific responsibilities of the PED. DOE/RL-94-02 identifies responsibilities of a Building Warden or Building Emergency Director that may be applicable to the PED. Suggest reviewing the appropriate sections of DOE/RL-94-02 to determine if the responsibilities are applicable.
24	15/ Appendix 3, 3.2.3	Second paragraph, first sentence states "A list if all PEDs (primary and alternate) shall be located in the ONC in accordance with the Hanford Facility RCRA Permit (dangerous waste portion)." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA requirements would not be applicable to an administrative facility.
25	16/ Appendix 4, 2.0	Sentence states that section applies to WTP project personnel

#	Page/Section	Comment
		responsible for "developing the ERAP." However, DOE/RL-94-02 (section 14.2.1) states "Based upon the organization and management of the Hanford Site emergency management program, individual facility ERAPS are not provided. Rather, RL/ORP and site contractor Emergency Preparedness personnel participate in the preparation of a consolidated Hanford ERAP." Suggest rewording to state "participating in the development of the Hanford ERAP."
26	16/ Appendix 4, 3.1	Third paragraph, last sentence does not make sense. Suggest wording to state "The Emergency Management Administrator will ensure that the status of such items is included in the annual Hanford ERAP".
27	17/ Appendix 4, 3.3	First paragraph, first sentence states "WTP shall prepare an annual report to support the annual 5-year ERAP…" However, DOE/RL-94-02 (section 14.2.1) states "Based upon the organization and management of the Hanford Site emergency management program, individual facility ERAPS are not provided. Rather, RL/ORP and site contractor Emergency Preparedness personnel participate in the preparation of a consolidated Hanford ERAP." Suggest rewriting sentence to state "WTP shall participate in the preparation of a consolidated Hanford ERAP consistent with the requirements in DOE/RL-94-02, *Hanford Emergency Management Plan*, Section 14.2.1."
28	17/ Appendix 4, 3.3	Second paragraph, last sentence – change "DOE/RL ERAP" to "Hanford ERAP."
29	18/ Appendix 5, 1.0	First sentence states that this section describes the WTP process for conducting notifications for RCRA Contingency Plan implementation incidents." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA Contingency Plan implementation requirements would not be applicable to an administrative facility.
30	18/ Appendix 5, 1.0	Last sentence states that "The notification process is outlined in Appendix 1, Figure 1." There is no such notification figure in Appendix 1 or the document itself.
31	18/ Appendix 5, 3.1.1	Third paragraph states that "…events be assessed to determine if the meet RCRA contingency plan implementation criteria in order to comply with WAC-173-303-360(2)(d) requirements…" Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA Contingency Plan implementation requirements would not be applicable to an administrative facility.

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32	19/ Appendix 5, 3.1.1.1, C.1	This entire section deals with "Implementation of the Resource Conservation and Recovery Act Contingency Plan." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA Contingency Plan implementation requirements would not be applicable to an administrative facility.
33	20/ Appendix 5, 3.1.2	Section refers to notifications for events at the WTP project. First paragraph, first sentence identifies "Environmental Events." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, Environmental Events would not be applicable to an administrative facility. Also, first paragraph, second sentence states that "Notifications shall be made in order if urgency with Operational Emergency (Hazardous Material Operational Emergency only) notifications performed first; Environmental notifications (those that meet RCRA Contingency Plan implementation requirements) performed second; …" Hazardous Material Operational Emergencies are not applicable to the WTP project. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, RCRA Contingency Plan implementation requirements would not be applicable to an administrative facility. Suggest rewriting the paragraph to delete reference to Hazardous Material Operational Emergencies and Environmental notifications.
34	21/ Appendix 5, 3.1.2.2	Section refers to "Environmental Notifications." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, Environmental Notifications (i.e., RCRA contingency plan implementation notification) would not be applicable to an administrative facility.
35	21/ Appendix 5, 3.2	Last sentence states "This includes trained PEDs, (as applicable), supervisors/superintendents, WTP Single Points of Contact, and Environmental Points of Contact." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, Environmental Points of Contact would not be applicable to an administrative facility.
36	25/ Appendix 6	There are two Appendix 6 sections – one titled "Hazards Survey" beginning in page 23 of 37 and another titled "Drills" beginning on page 25 of 37. If this was intentional, there does not appear to be a connection as to why both are listed as Appendix 6.
37	25/ Appendix 6, 1.0	First paragraph, second sentence uses the term "emergency preparedness drills." Use of the term may not be consistent with the same term used in DOE/RL-94-02, which indicates that emergency preparedness drills are not applicable to administrative facilities.
38	25/ Appendix 6, 2.0	Sentence again uses the term "emergency preparedness drills." Use of the term may not be consistent with the same term used in DOE/RL-94-02, which indicates that emergency preparedness drills are not applicable to administrative facilities.

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39	25/ Appendix 6, 3.2.1	Fourth bullet states to coordinate WTP drills with the "Hanford Site Drill Coordinator." Suggest rewording to state "FH Emergency Preparedness Drill Team."
40	25/ Appendix 6, 3.2.2	This section identifies the requirements of the Drill Controller. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, some drill controller requirements listed may not be applicable to an administrative facility.
41	26/ Appendix 6, 3.2.3	This section outlines the "Responsibilities" for personnel assisting in the conduct of a drill. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, some drill positions listed may not be applicable to an administrative facility.
42	27/ Appendix 6, 3.3.1	This section identifies the requirements of "Scheduling Emergency Preparedness Drills." Use of the term Emergency Preparedness Drill" may not be consistent with the same term used in DOE/RL-94-02, which indicates that emergency preparedness drills are not applicable to administrative facilities. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, emergency preparedness drill requirements are not be applicable to an administrative facility.
43	27/ Appendix 6, 3.3.2	This section identifies "Drill Development/Preparation" requirements. First paragraph identifies requirements for a pre-drill scenario plan. Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, preparing a pre-drill scenario plan is not be applicable to an administrative facility.
44	27/ Appendix 6, 3.3.2	The fourth bullet under the second paragraph states "Response to spills and releases of hazardous materials, including the detection and monitoring of such releases." Previous understanding was that initially WTP would not be considered a RCRA facility and, as such, hazardous materials would not be present in an administrative facility.
45	28/ Appendix 6, 3.3.3	Sentence again uses the term "emergency preparedness drills." Use of the term may not be consistent with the same term used in DOE/RL-94-02, which indicates that emergency preparedness drills are not applicable to administrative facilities.
46	30/ Appendix 7, 3.2.2	The second sentence refers to the use of DOE-023, RLEP3.4, "Event Termination, Re-entry and Recovery." In actuality, this procedure would not be used for an event involving an administrative facility.
47	31/ Appendix 7, 3.2.3	Last paragraph, last sentence refers to the use of DOE-023, RLEP3.4, "Event Termination, Re-entry and Recovery." In actuality, this procedure would not be used for an event involving an administrative facility.

#	Page/Section	Comment
48	35/ Appendix 9	Suggest re-titling appendix to read "WTP Construction Emergency Preparedness Hazards Survey." This may prevent some confusion between Appendix 6, which delineates the requirements for a hazards survey, and Appendix 9, which is the actual WTP construction hazards survey.

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